

men the collector states that the leaves are 7-lobed. The two leaves which the specimen bears are but 5-lobed. Doubtless the lower leaves have an additional pair of lobes.

***Passiflora* (*Granadilla*) *popenovii* Killip, sp. nov.**

Vine, up to 8 meters in length, glabrous throughout, except the ovary and outer surface of the flower tube; stem terete below, 4 or 5-angled above, striate; tendrils wiry, up to 0.8 mm. in diameter; stipules narrowly linear-subulate, 1 cm. long, 0.5 mm. broad, deciduous; petioles slender, averaging 2 cm. in length, slightly tortuose toward the base, glandless; leaves oblong-ovate or elliptic-ovate, 8.5 to 14.5 cm. long, 4 to 7 cm. wide, acuminate, rounded at base, entire, papery or pergamentaceous, lustrous on both surfaces, featherveined (lateral veins 4 or 5 pairs) and prominulous-reticulate, without ocellae; peduncles slender, elongate, 8 to 10 cm. long; bracts distinct to base, concave, 2 to 2.5 cm. long, 1.2 to 1.5 cm. broad, rounded and often cleft at apex, narrowed at base, entire, minutely puberulent on the lower part of the outer surface; flowers showy, fragrant, up to 10 cm. wide; the tube 1.2 cm. long; sepals deep rose-colored, oblong, 3 to 3.5 cm. long, 1.5 to 2 cm. broad, slightly concave, wide-spreading when developed, obtuse, keeled on the outer surface, the keel terminating in a cusp 3 mm. long; petals white, linear-oblong, 3 to 3.5 cm. long, averaging 1 cm. wide, flat, slightly reflexed; filaments of faucial corona in 4 series, the 2 outer at throat of tube, white, banded with purplish-blue, the 2 inner 3 mm. and 2 mm. from the throat, the filaments of the outermost series filiform, 1.5 cm. long, 1 mm. thick at base, slightly divaricate, those of second series ligulate, fleshy, 3 to 3.5 cm. long, 2 to 2.5 mm. wide, those of third series capillary, 1 mm. long, those of the fourth series capillary, 2 mm. long; middle corona membranous, 5 mm. long, the lower half adnate to the floor of the flower tube, the upper half free, slightly recurved; basal corona none; gynophore stout, grooved, conspicuously swollen about 1 cm. above base; ovary globose, narrowed at base, densely tomentellous; styles clavate, 6 mm. long; stigmas 3 mm. in diameter.

Type in the U. S. National Herbarium, no. 1,060,000, cultivated in volcanic loam at Baños, Tungurahua, Ecuador, at an altitude of 1,850 meters, collected March 6, 1921, by Wilson Popenoe (no. 1271).

The nearest relative of *P. popenovii* is *P. laurifolia*, widely cultivated in the West Indies under the name water-lemon. The flowers of the two species are very much alike, the coronal structure being practically identical. *Passiflora popenovii* is to be separated, however, by its thinner, more acuminate leaves, by the absence of petiolar glands, and by its more slender and more elongate peduncles.

This species is one of several cultivated in Ecuador under the name of "Granadilla de Quijos" and the edible fruit is commonly on sale in the markets of Baños and Riobamba. It is said to be indigenous on the eastern slopes of the Andes.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED  
SOCIETIES

## BIOLOGICAL SOCIETY

## 641ST MEETING

The 641st meeting was held at the Cosmos Club on May 13, 1922, with President BAILEY in the chair and 74 persons present. The minutes of the last meeting were read and approved. M. N. POPE and Dr. J. W. ROBERTS were elected members of the Society.

*Short Notes*

Dr. WHITE exhibited a fossil frog or toad in a remarkable state of preservation. It was taken from some oil shale at Elko, Nevada, and is the property of W. K. SHEELER of that place. The stratum is of Middle Miocene age, overlying beds of lignite. It seems that the development of vegetable growth in the water of that early period gradually resulted in ulmohumic acid accumulation, which apparently stopped bacterial growth and thus the frog was preserved in a medium virtually aseptic.

Mr. ALDRICH said in this connection that the shales of the Green River at the Dinosaur Monument in Utah contain many dipterous larvae which seem certainly to be those of botflies, though no reason can be thought of to account for such large numbers of these flies, now very scarce.

Dr. HOWARD asked if Dr. WHITE could conjecture what animal could have been the host of such a quantity of bots. He could not offer a suggestion on the matter, however. But he added the remark that the open quarrying of oil shales on a large scale in the West, which is sure to come before many years, will be a veritable gold mine for the paleontologists.

MISS BOONE reported that she had recently visited Mr. CHAS. T. SIMPSON, formerly of the National Museum staff, at his home in Florida. He has for a long time been engaged in gathering and cultivating on a Florida hammock a large number of Florida and other tropical plants; and lately the city of Miami has adopted his place as a public park, to remain in his care.

Dr. WETMORE stated that bird notes are sometimes very unusual. Near Mt. Vernon a few days ago he heard a small bird singing an unfamiliar song from a position on a telephone wire. On inspection, it proved to be an ovenbird. He said that Mr. MCATEE had noted the same case a year earlier at almost the same place.

The first paper of the evening was by Dr. T. S. PALMER, on the subject *Twenty years of Federal protection of the buffalo*.

The first and only appropriation for the purchase of buffalo ever passed by Congress was approved by President Roosevelt July 1, 1902. It was a provision in the general deficiency bill carrying \$15,000 for the purchase of buffalo for the Yellowstone National Park, providing fencing, and maintenance for one year. Under this act 21 buffalo were purchased and established at the park.

In 1902 the total number of buffalo in existence was only about 1750, of which 600 were wood bison in Canada; 200 were in a single herd, the property of Michael Pablo in Montana; 52 belonged to the government, and others in small scattered herds. The only wild buffalo were 22 in the Yellowstone National Park and 5 in Lost Park, Colorado. The government herds included 9 head in the Zoological Park here in Washington.

In 1922 the total number of buffalo in existence is over 10,000 of which 6,000 are in Canada and approximately 4,000 in the United States. The Government now has nine widely separated herds with a total of 1,250 buffalo, as follows:

Two in the east—one in Washington, D. C., in sight of the place where buffalo were first seen by white men in 1612; the other at Pisgah, N. C., not far from where buffalo were first reported in that State about 1730.

Two in the Southwest on the former range of the southern herd—one on the Wichita Game Preserve, the other in Platte National Park, in Oklahoma.

Three in the northern Plains Region, the former range of the northern herd—one at Niobrara Reservation, Nebraska; one on the Wind Cave National Park, South Dakota; and one at Sully Hill, North Dakota.

Two in the Rocky Mountain region—one near Ravalli on the former Flat-head Reservation, the former home of the Canadian herd; and the other in the Yellowstone National Park.

Five of these herds are on National Parks—Zoological Park, Platte, Wind Cave, Sully Hill, and Yellowstone; four on National Game Preserves—Wichita, Oklahoma; Pisgah, North Carolina; Niobrara, Nebraska; and the Montana Bison Range.

The number of buffalo now in the government herds (1250) represents about two-thirds of the total number of buffalo living twenty years ago. All but about 130 were born on the reservations. The number of calves born last year was approximately 165.

The biological problems of chief importance are those relating to diseases, life history of the animals, and breeding. Four serious diseases are known to occur—Texas fever, gastro-enteritis, haemorrhagic septicemia, and contagious abortion.

The wide dispersal of the various government herds makes it impossible for any epidemic to entirely exterminate the species in the United States.

The length of life of a buffalo, the normal number of calves, and the normal ratio of the sexes, are still unknown. It is generally known that buffalo begin to breed the third year, and the cows have calves every other year or two years out of three, but how long they continue to breed is still to be determined. There is a record of a cow breeding in her twenty-sixth year, and one on Wichita preserve had a calf at the age of 22. The oldest buffalo on record is in Paris, said to be 31 years old. The oldest members of the government herds are a cow 24 years old on the Wichita Preserve and Kalispel Chief, the leader of the Montana herd, now 20 years old. The "ten-dollar buffalo," which lived in the Zoological Park, was upwards of 20 when he died a few years ago.

At the conclusion of the paper MAJOR SHUFELDT gave reminiscences of hunting buffalo in Montana while in army service; the army expedition of which he was a member used several for meat, which he and others shot.

Mr. ROHWER asked whether the government is doing any experimental work in crossing the buffalo with domestic cattle. Dr. PALMER said it is not, but the Canadian government has taken over some private work and expects to extend it.

Dr. WHITE called attention to the fact that Dr. PALMER had himself played a leading part in securing the establishment of the government herds.

Dr OBERHOLSER took the chair, and President VERNON BAILEY exhibited some wild animals, and at the same time gave an informal talk on *Wild*